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Title: non-organizational factors associated with delayed adjuvant chemotherapy (AC) in colon cancer (CC): an epidemiological study in "Région Centre", France.

Background: based on retrospective studies, the French National Thesaurus of Digestive Oncology (TNCD) has underlined the negative prognostic impact of delayed time to AC in CC, beyond the 42th postoperative day. While programs in several countries aim to reduce these delays, little is known about associated factors. Our objective was to investigate and analyze the non-organizational factors influencing delay between colectomy and initiation of AC in CC.

Material and methods: in this retrospective observational epidemiological study, cases were selected from our regional hospital discharge database. All adult patients operated on for CC stages 2 or 3 in "Région Centre" in 2013, were included. Patients with rectal cancer or with past history of CC were excluded. For each case, time to AC and likely non-organizational associated factors (age, sex, familial and employment situation, circumstances of diagnosis including emergency surgery, postoperative morbidities, and type of colectomy) were collected from medical records. Univariate and multivariate analysis were performed using linear regression generalized model (GLM).

Results: among 408 cases, 182 (sex ratio 1.5; median age 67.5 years, range 32-90) received AC. Patients with AC were younger than those without AC (respectively 67.6 vs 77.9 years, $p < 0.001$). Median time to AC was 48 days and exceeded 42 days in 60% of cases. In multivariate analysis, not living in couple and emergency colectomy were the only associated factors with an increased delay, respectively by 8.3 and 8.6 days ($p < 0.05$). Postoperative morbidity delayed time to AC by 7.2 days but not significantly ($p = 0.056$). In contrast, age, sex and type of colectomy were not associated with delayed time to AC.

Conclusions: in CC, times to AC observed in "Région Centre" are consistent with those observed in the national study of the French National Cancer Institute INCa. Age was not associated with delay to AC, but was a limitation in AC access. Relevance of omitting AC in older patients needs further investigations. In our study, emergency colectomy and not living in couple were associated with significant delays. To act on these factors is difficult and their consideration is useful in the evaluation of organizational measures implemented to reduce time to postoperative AC in CC.

Keywords: colon cancer, time to adjuvant chemotherapy, epidemiology